ORIGINAL RESEARCH

59. Assessment Of Vision Impairments Among Licensed Drivers In Mathura: A Pilot Study

Dr Ragni Kumari,[1] Jagdish Singh.[2]

[1] Medical School, India

[2] Assistant Professor, Department of Optometry, UPUMS, Saifai, Etawah, India

Background: Driving is a visually intensive task that requires the integration of multiple visual functions to ensure road safety. In India, vision screening protocols for obtaining a driving license are often inadequate or inconsistently enforced. This pilot study was conducted to assess the prevalence and types of vision impairments among licensed drivers in Mathura district.

Objective: To evaluate key visual parameters—glare recovery, night vision, color vision, visual acuity, phoria, and horizontal visual field—among licensed male drivers and determine their potential impact on driving performance.

Methods: A cross-sectional pilot study was conducted at Spexwear Optical & Physiotherapy Centre, Mandi chauraha, Sonkh Road, Mathura. A total of 198 male drivers aged 18–56 years participated. Standardized tests were conducted to assess visual acuity (Snellen chart), color vision (Ishihara plates), glare recovery, night vision, phoria, and horizontal field of vision. Data were analyzed using descriptive statistics and chi-square tests; p-values < 0.05 were considered statistically significant.

Results: Visual acuity deficits were noted in 29% of participants (binocular), 33% (right eye), and 25% (left eye). Impairments in glare recovery and night vision were present in 15% and 12% of drivers, respectively. Color vision deficiency was found in 23% of participants, with an additional 13% requiring retesting. Phoria was abnormal in 24%, and 19–20% of drivers showed subnormal horizontal field vision in at least one eye. Most impairments showed statistically significant associations ($p < 0.05$) with driving fitness.

Conclusion: A significant proportion of licensed drivers in Mathura have unrecognized visual impairments. Comprehensive vision screening should be made mandatory in the driver licensing process to enhance road safety and reduce accident risks.

Figure 1: Night Vision Test

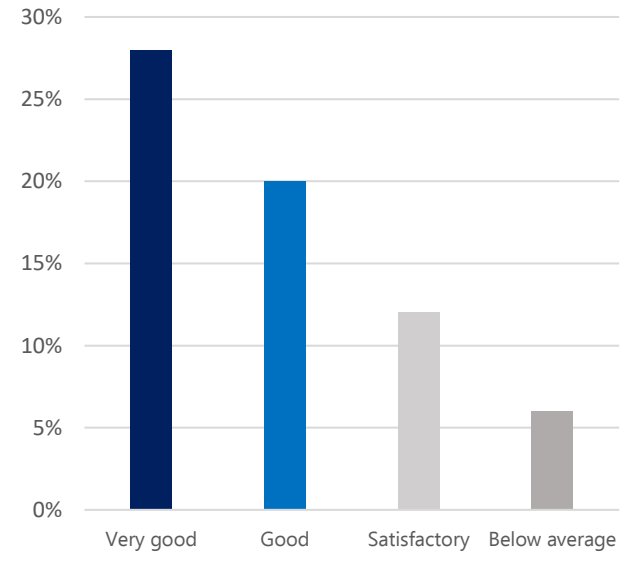

Table 1. Distribution of Visual Function Test Results Among Drivers

Glare Recovery Test			
Grade	Number of Drivers	Percentage (%)	P value
Outstanding (10)	8	4%	
Excellent (9)	9	5%	
Very Good (8)	41	20%	
Good (7)	40	20%	
Reasonably Good (6)	30	15%	
Satisfactory (5)	29	15%	= 0.042
Above Average (4)	9	5%	
Average (3)	8	4%	
Below Average (2)	14	7%	
Poor (1)	10	5%	

Night Vision Test			
Grade	Number of Drivers	Percentage (%)	P value
Outstanding (10)	9	5%	
Excellent (9)	16	8%	
Very Good (8)	55	28%	
Good (7)	39	20%	
Reasonably Good (6)	19	10%	
Satisfactory (5)	23	12%	= 0.031
Above Average (4)	10	5%	
Average (3)	8	4%	
Below Average (2)	11	6%	
Poor (1)	5	2%	

Color Vision Test			
Grade	Number of Drivers	Percentage (%)	P value
Normal	125	64%	
Unsuccessful	46	23%	= 0.019
Retest Needed	27	13%	

Visual Acuity Test						
Grade	Right Eye (n)	Left Eye (n)	Both Eyes (n)	Right Eye (%)	Left Eye (%)	P value
Normal	110	128	120	56%	65 %	
Unsuccessful	66	50	59	33%	25 %	=0.027
Retest Needed	22	20	19	11%	10 %	

Phoria Test			
Grade	Number of Drivers	Percentage (%)	P value
Normal	136	69%	
Unsuccessful	47	24%	=0.022
Retest Needed	15	7%	

Horizontal Visual Field Test				
Eye Side	Normal (n, %)	Unsuccessful (n, %)	Retest Needed (n, %)	P value
Left	154 (78%)	38 (19%)	6 (3%)	= 0.018
Right	152 (77%)	40 (20%)	6 (3%)	

ISSN 2076-6327

This journal is published by Pitt Open Library Publishing